VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the Virginia Pollutant Discharge Elimination System (VPDES) permit listed below. This permit is being processed as a Minor, Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge results from the operation of a publically owned wastewater treatment plant serving an approximate population of 2,000 users. This permit action consists of reissuing and updating the permit to reflect current VPDES policy and guidance, and adding monitoring and reporting requirements for hydrogen sulfide.

1. Facility Name: Town of Kilmarnock Wastewater Treatment Plant

   Facility Address: 817 Waverly Avenue
   Kilmarnock, Virginia 22482

   Mailing Address: P. O. Box 1357
   Kilmarnock, Virginia 22482

2. Permit No. VA0020788 Existing Permit Expiration Date: October 31, 2016

3. Owner: Town of Kilmarnock
   Owner Contact: Tom Saunders Title: Town Manager
   Telephone No.: (804) 435-1552

4. Application Complete Date:
   DEQ Regional Office: Piedmont Regional Office
   Permit Drafted By: Laura Galli Date:

   Reviewed By: Shawn Weimer Date: August 2, 2016
   Kyle Ivar Winter, P.E. Date: August 18, 2016

5. Receiving Stream Name: Indian Creek, UT
   River Mile: 7-XDD000.13
   Basin: Chesapeake Bay/Atlantic/Small Coastal
   Subbasin: N/A
   Section: 2d
   Class: III
   Special Standards: None

1-Day, 10-Year Low Flow (1Q10):	0.0 MGD	30-Day, 5-Year Low Flow (30Q5):	0.0 MGD
1-Day, 10-year High Flow:	0.0 MGD	30-Day, 10-Year Low Flow (30Q10):	0.0 MGD
1-Day, 30-year Low Flow (1Q30):	0.0 MGD	30-Day, 10-Year High Flow:	0.0 MGD
7-Day, 10-Year Low Flow (7Q10):	0.0 MGD	Harmonic Mean Flow (HM):	0.0 MGD
7-Day, 10-Year High Flow:	0.0 MGD		

   Tidal? No On 303(d) list? Yes

   See **Attachment A** for flow frequency analysis memorandum.

6. Operator License Requirements: Class II
   The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collection and Treatment Regulations (SCAT) 9 VAC 25-790-300. A Class II operator is required for this facility.

7. Reliability Class: Class I
   Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and

public health consequences of a component or system failure. The permittee is required to maintain Class I reliability for this facility.

8. Permit Characterization:

( ) Private ( ) Federal ( ) State (**X**) POTW ( ) PVOTW

9. See **Attachment B** for facility flow diagram.

Table 1. Discharge Description

Outfall Number	Discharge Source	Treatment	Design Flow
001	Residential & Commercial	alum & lime addition, comminutor & grit removal, 2 flow equalization basins, 2 Schreiber Biological Nutrient Removal (BNR) reactors, 2 traveling bridge sand filters, ultraviolet (UV) disinfection, post-aeration, effluent pump to outfall 001, 2 aerobic digesters, sludge dewatering rotary fan press, and off-site landfill sludge disposal	0.50 MGD

10. Sewage Sludge Use or Disposal:
Existing and proposed sludge management consists of removing the waste sludge from the process flow and dewatering it utilizing a rotary fan press. Waste Management, Inc. has been contracted to haul the dewatered sludge to the Middle Peninsula Landfill and Recycling Facility (DEQ Solid Waste facility Permit No. 572) for off-site disposal.

11. Discharge Location Description: This facility discharges to an unnamed tributary of Indian Creek
Topographic Map Name: Fleets Bay, Virginia
Topographic Map Number: 122A

See **Attachment C** for topographic map.

12. Material Storage:
Alum and lime utilized for phosphorus removal and pH adjustment, respectively, are stored under roof cover in the chemical feed building. Polymers utilized for sludge thickening and dewatering are stored under roof cover in the rotary fan press building.

13. Ambient Water Quality Information:
At the point of discharge, the receiving stream is an unnamed, intermittent tributary to Indian Creek. See Attachment A. Due to the intermittent nature of the receiving stream, no water quality or stream flow data are available for utilization in this evaluation. Therefore, for wasteload allocation development and permit limitation evaluations, receiving stream flow is assumed to be comprised of 100% wastewater treatment plant (WWTP) effluent, and specific ambient water quality parameters (i.e. hardness, temperature, and pH) are assumed to be equal to those of the WWTP's effluent. Due to the lack of receiving stream water quality data, ambient water quality concentrations (i.e. MSTRANTI parameter background concentrations) are assumed to be zero for wasteload allocation development and permit limitation evaluations.

303(d) Listed Segments (TMDL):
The Indian Creek, Unnamed Tributary was not assessed for any designated uses during the 2014 305(b)/303(d) Water Quality Assessments Integrated Reports; therefore, the receiving stream is considered a Category 3A water ("No data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.")

The facility was addressed in the Indian, Tabbs, Dymer, and Antipoison Creeks Bacterial TMDL, which was approved by the EPA on 4/8/2009 and by the SWCB on 7/27/2009. The TMDL was subsequently modified on 4/12/2011. The WWTP received a fecal coliform wasteload allocation of 3.79E+09 MPN/day based on an effluent concentration of 200 MPN/100mL and a design flow of 0.5 MGD. In addition, it was assigned an enterococci wasteload allocation of 6.62E+08 cfu/day based on the geometric mean water quality standard of 35 cfu/100 ml and a design flow of 0.5 MGD.

This facility discharges directly to an unnamed tributary of Indian Creek in the Chesapeake Bay watershed in segment CB5MH. The receiving stream has been addressed in the Chesapeake Bay TMDL, approved by EPA on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185. This facility is considered a Significant Chesapeake Bay wastewater discharge, and has been assigned a TN WLA of 6,091 pounds per year, a TP WLA of 457 pounds per year, and a TSS WLA of 45,683.4 pounds per year.

Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP), approved by EPA on December 29, 2010. The approved WIP recognizes that the TMDL nutrient WLAs for Significant Chesapeake Bay wastewater dischargers are set in two regulations: 1) the Water Quality Management Planning Regulation (9VAC25-720); and 2) the "General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia" (9VAC25-820). The WIP further outlines that since TSS discharges from wastewater facilities represent an insignificant portion of the Bay's total sediment load, they may be considered in the aggregate. The WIP also states that wastewater discharges with technology-based TSS limits are considered consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. DEQ has provided coverage under the VPDES Nutrient General Permit (GP) for this facility under permit VAN020038. The requirements of the Nutrient GP currently in effect for this facility are consistent with the Chesapeake Bay TMDL. This individual permit includes TSS limits of 16 mg/L that are also consistent with the Chesapeake Bay TMDL and WIP.

14. Antidegradation Review & Comments:

Tier: 1 _X_ 2 _____ 3 _____

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. Due to its intermittent nature (i.e. dry ditch), the receiving stream, an unnamed tributary to Indian Creek, is determined to be a Tier 1 water body.

15. Site Inspection: Date: December 9, 2015 and March 8, 2016 Performed By: Azra Bilalagic

See **Attachment D** for site inspection report.

16. Effluent Screening & Limitation Development:

See **Attachment E** for effluent data submitted on the monthly Discharge Monitoring Reports (DMRs) and for the water quality criteria monitoring data ("Attachment A" monitoring) submitted with the permit reissuance application.

Conventional Pollutants:

$cBOD_5$ (159), TKN (068), and DO (007): These permit limitations were established in 1993 utilizing the Regional Water Quality Model for Free Flowing Streams (Case Study #2). See **Attachment F** for the Stream Sanitation Analysis Memo. The memo assigned a $CBOD_5$ monthly average limitation of 16 mg/L, a TKN monthly average limitation of 3.0 mg/L, and a DO minimum limitation of 6.5 mg/L for a design flow of 0.50 MGD. Because no changes have occurred in the design flow of the plant, these limitations will be carried forward to the 2016 Permit.

pH (002): A pH limitation of 6.0 to 9.0 standard units is assigned to all Class III Nontidal Waters in accordance with the Water Quality Standards (WQS), 9 VAC 25-260-50, and federal secondary treatment standard guidelines.

TSS (004): Historically, TSS limitations have been established by assigning TSS limits equal to $cBOD_5$ limits. This traditional approach was utilized to assign TSS limitations for the 2011 permit. The 2011 TSS concentration limitations will be carried forward to the 2016 permit on a professional judgment basis.

Fecal Coliform (006): The wastewater treatment plant received Fecal Coliform allocations of 1.40E+12 MPN/year and 3.82E+09 MPN/day based on an effluent concentration of 200 MPN/100 mL and a design flow of 0.50 MGD in the modified Indian Creek TMDL approved by EPA on 4/12/2011. Therefore, a Fecal Coliform limitation of 200 N/100 mL, applied as a monthly geometric mean, is being carried forward to the 2016 permit. A minimum monitoring frequency of four samples in each complete calendar month is maintained for this parameter in accordance with GM14-2003.

E-Coli (120): All sewage discharges must be disinfected to achieve applicable bacterial concentrations in accordance with the WQS, 9 VAC 25-260-170. *E-Coli* is the bacterial indicator for sewage effluents discharging to freshwater. In order to protect primary contact recreation uses in surface waters, an effluent limitation of 126 N/100 mL, applied as a monthly geometric mean, is included in this permit reissuance.

Enterococci (140): The wastewater treatment plant received *Enterococci* allocations of 6.69E+08 CFU/day based on the geometric mean water quality standard of 35 CFU/100 mL and a design flow of 0.50 MGD in the modified Indian Creek TMDL approved by EPA on 4/12/2011. Therefore, an *Enterococci* limitation of 35 N/100 mL, applied as a monthly geometric mean, is included in this permit reissuance. A minimum monitoring frequency of four samples in each complete calendar month is maintained for this parameter in accordance with GM14-2003.

Hardness (137): Effluent hardness monitoring and reporting have been included in the 2011 permit reissuance based on best engineering judgment and will be carried forward to the 2016 permit on a professional judgment basis.

Reasonable Potential Analysis

Metals: If it is determined that a specific pollutant cited in the Virginia Water Quality Standards (9 VAC 25-260 et seq.) is present in a facility's effluent, a reasonable potential analysis is required in order to determine if the facility may violate Water Quality Standards (WQS). This evaluation begins by determining the maximum allowable pollutant concentrations that can be discharged by a specific facility which will maintain the acute and chronic criteria contained in the WQS within the receiving stream (called "wasteload allocations" or WLA's). The WLA's are calculated using a DEQ Excel spreadsheet, MSTRANTI, which requires inputs representing critical data for effluent and stream flows and quality. The STATS computer

application is then utilized to determine if the identified pollutant has the potential to exceed either the acute or chronic WLA's on a long term basis by calculating the expected long-term effluent distribution of the facility, then comparing the 97th percentile of that distribution to the pollutant's lowest calculated wasteload allocation. If a limitation is needed, STATS will also calculate that limitation based on EPA guidelines for the control of toxic pollutants. Lastly, the expected value of the pollutant is compared to applicable human health water quality standards.

The freshwater aquatic life WQS for metals are expressed in the dissolved form with the exception of selenium. Therefore, total recoverable metals data are not used to establish permit limitations. The freshwater aquatic life WQS for selenium are expressed in the total recoverable form. Consequently, total recoverable selenium data are used to perform reasonable potential analyses. The metals data provided with the Attachment A – Water Quality Criteria Monitoring did not meet the DEQ recommended quantification levels (QLs); therefore, the laboratory reported QLs were used as detected concentrations in the reasonable potential analysis.

Included in **Attachment G** are the effluent limitation development documents including the MSTRANTI data source table, MSTRANTI spreadsheet of WLAs, and STATS.exe analyses to determine reasonable potential to violate WQS. The reasonable potential analyses for metals show that no limitations are required for any of the metals with the exception of total recoverable selenium (7.31 µg/L based on chronic toxicity), dissolved silver (9.60 µg/L based on acute toxicity), and dissolved zinc (190 µg/L based on acute toxicity). Add comment on silver and selenium. The existing, more stringent limitation of 140 µg/L for total recoverable zinc and the existing limitation of 17 µg/L for total recoverable copper will be carried forward to the 2016 permit in accordance with antibacksliding regulations.

Chloride: this parameter was detected at a concentration of 36.8 mg/L; the reasonable potential analysis for this parameter shows that no limitation is required. The chloride human health – public water supply criterion is not applicable to the facility's receiving stream; however, the detectable concentration was compared against the criterion to illustrate the effluent's potential impact on human health.

Total Phosphorus - Calendar Year Average (794) & Year-to-Date (806): The permittee submitted a Preliminary Engineering Report (PER) and Interim Optimization Plan for nutrient removal at the 0.50 MGD facility. The PER was approved by DEQ on 10/1/2008 and included an effluent Total Phosphorus (TP) concentration of 0.30 mg/L. According to the PER, this TP concentration was to be achieved through the utilization of chemical addition. The permittee received a Certificate to Operate from DEQ for the chemical feed building on 6/16/2008 (PT Log No. 23936). In accordance with 9 VAC 25-40-70 and GM 07-2008 Amendment 2, a TP limitation and monitoring requirement was included in the 2011 permit based upon the previously approved PER and installed nutrient removal technology, and is being carried forward to the 2016 permit.

Dissolved Sulfide (872): The 2005 permit contained limitations and a schedule of compliance for hydrogen sulfide (H_2S). Over the course of the 2005 permit cycle, the permittee upgraded, operated, and maintained its WWTP. However, the permittee was unable to meet the imposed hydrogen sulfide limitations; therefore, backsliding was warranted. The 2005 hydrogen sulfide limitations were removed from the 2011 permit in lieu of monitoring and reporting for dissolved sulfide.

During the 2011 permit application process total sulfides were reported in the effluent. Through a conversion method, these data were initially used in an attempt to assess potential hydrogen sulfide (H_2S) levels. However, the accuracy and precision of using total sulfide results for developing limits for H_2S have recently come under question. According to Standard Methods, the unionized H_2S "can be calculated from the concentration of dissolved sulfide, the sample pH, and the conditional ionization constant of H_2S." Based on the above, it appeared to be more appropriate to specify that results be reported as dissolved sulfide. To provide data to evaluate the potential presence of H_2S and need for a limit, dissolved sulfide monitoring was required once per six months by grab sample for the 2011 permit reissuance. In accordance with GM14-2003, because dissolved sulfide was detected at concentrations greater than 0.1 mg/L during the 2013-2016 monitoring period, monitoring and reporting requirements for dissolved sulfide

should continue for the 2016 permit cycle. In addition, the un-ionized concentration of H_2S shall be calculated and reported on the DMR. If the sample results of dissolved sulfide are below the quantification level (QL), then the concentration of un-ionized H_2S should be reported as "<QL."

A reasonable potential analysis utilizing data for dissolved sulfide from 2013 to present shows that no limitations are required for hydrogen sulfide. Consequently, a Hydrogen Sulfide Minimization Plan is also not required.

Total Residual Chlorine (005): Water quality based effluent limitations. See Part I.B of the draft permit if chlorination is chosen as a method of disinfection. In accordance with GM00-2011, the acute and chronic wasteload allocations from MSTRANTI were entered into STATS along with one datum of 20,000 µg/L in order to statistically derive permit limitations. See STATS analysis in Attachment G. A monthly average limitation of 7.4 µg/L is carried forward to the 2016 Permit; a slightly more stringent weekly average limitation of 8.3 µg/L will be included.

Ammonia as Nitrogen (039): In accordance with GM00-2011, the acute and chronic wasteload allocations from MSTRANTI were entered into STATS along with one datum of 9.0 mg/L in order to force a limit. The Ammonia (as N) limits calculated are less stringent that those contained in the 2011 permit. Therefore, the 2011 permit limits have been carried forward in order to avoid backsliding.

Free Cyanide (131): The 2005 permit contained water quality based limitations and a schedule of compliance for total cyanide. It is noted that DEQ staff utilized best professional judgment (BPJ) to establish the 2005 permit limitations. At the time of 2005 permit reissuance, the Virginia WQS for cyanide were expressed in terms of free cyanide. However, EPA had not established an approved testing method for free cyanide. Therefore, wasteload allocations for free cyanide were utilized in conjunction with effluent data for total cyanide (an EPA approved testing method exits for this parameter) in order to perform a reasonable potential analysis. This analysis prompted the need for permit limitations. DEQ staff then utilized BPJ to insert total cyanide limitations along with a schedule of compliance into the 2005 permit.

During the 2011 permit reissuance total cyanide limitations were removed from the permit on the basis that EPA had yet to establish an approved testing method for free cyanide, and that the Virginia WQS for cyanide are still expressed in terms of free cyanide. The technical accuracy of using free cyanide wasteload allocations and total cyanide monitoring data for developing permit limitations had come under question. Due to the potential technical inaccuracy of this protocol, backsliding was warranted at that time, and the 2005 total cyanide limitations were removed from the permit. Monitoring and reporting for free cyanide were included in the 2011 permit based upon best engineering judgment.

During the 2011-2016 permit cycle, the permittee failed to provide free cyanide analyses, providing sampling results for total cyanide instead. One data point for free cyanide utilizing EPA approved method OIA-1677-09 was submitted with the July 2016 DMR, and it resulted below the limit of quantification. Therefore, no limitations are required for this parameter at this time; continued monitoring of free cyanide will be carried forward to the 2016 permit on a PJ basis.

Table 2. Human Health Evaluation

PARAMETER	MAX. REPORTED CONCENTRATION	HUMAN HEALTH CRITERION	FURTHER EVALUATION REQUIRED?
Total Recoverable Zinc (1)	103 µg/L	26,000 µg/L	NO
Dissolved Zinc	86 µg/L	26,000 µg/L	NO
Total Recoverable Copper (1)	14.1 µg/L	1,300 µg/L (2)	-----
Dissolved Copper(1)	5.5 µg/L	1,300 µg/L (2)	-----
Total Recoverable Selenium	0.94 µg/L	4,200 µg/L	NO
Chloride	36,800 µg/L	250,000 µg/L (2)	-----

(1) The human health criteria for these parameters are in the dissolved form for metals. Utilizing total recoverable metals data allows for conservative comparisons with the dissolved metals human health criteria.

(2) Human health – public water supply criterion which is not applicable to the facility's receiving stream. Comparison between the maximum reported detectable concentration and the human health criterion performed for illustrative purposes only.

Table 3. Basis of Effluent Limitations

EFFLUENT CHARACTERISTICS	BASIS FOR LIMITS	DISCHARGE LIMITATIONS			
		MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM
001 – Flow	NA	NL	NA	NA	NL
002 – pH	1, 2	NA	NA	6.0 s.u.	9.0 s.u.
004 – Total Suspended Solids (TSS)	3	16 mg/L 30 kg/d	24 mg/L 45 kg/d	NA	NA
005 – Total Residual Chlorine (TRC)	2	7.4 µg/L	8.3 µg/L	NA	NA
006 – Fecal Coliform	4	200 N/100 mL	NA	NA	NA
007 – Dissolved Oxygen (DO)	6	NA	NA	6.5 mg/L	NA
039 – Ammonia as Nitrogen	2	0.54 mg/L	0.72 mg/L	NA	NA
068 – Total Kjeldahl Nitrogen (TKN)	6	3.0 mg/L 5700 g/d	4.5 mg/L 8500 g/d	NA	NA
120 – *E. coli*	2	126 N/100 mL	NA	NA	NA
131 – Free Cyanide	3	NL	NL	NA	NA
137 – Hardness	3	NA	NA	NL	NA
140 – *Enterococci*	4	35 N/100 mL	NA	NA	NA
159 – $cBOD_5$	6	16 mg/L 30 kg/d	24 mg/L 45 kg/d	NA	NA
196 – Total Recoverable Zinc	2	140 µg/L	140 µg/L	NA	NA
203 – Total Recoverable Copper	2	17 µg/L	17 µg/L	NA	NA
794 – Total Phosphorus Calendar Year Average	5	0.30 mg/L	NA	NA	NL
806 – Total Phosphorus Year-to-Date	5	NL	NA	NA	NL
872 – Dissolved Sulfide	3	NL	NL	NA	NA
328 - Hydrogen Sulfide	3	NL	NL	NA	NA

1. Federal Effluent Guidelines
2. Water Quality Based Effluent Limitations
3. Professional Judgment (PJ)
4. Indian Creek TMDL
5. Regulation for Nutrient Enriched Waters and Discharges within the Chesapeake Bay Watershed (9 VAC 25-40-70)
6. Regional Water Quality Model for Free Flowing Streams (1990)

17. Basis for Sludge Use & Disposal Requirements:
Not applicable, as this facility does not land apply sewage sludge; therefore there are no limitations or monitoring applicable to sludge.

18. Anti-backsliding Statement:
All limitations in the proposed permit are the same or more stringent than the limitations in the 2011 permit.

19. Special Conditions:

a. Part I.B – Additional Chlorine Limitations and Monitoring Requirements
Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

b. Part I.C.1 – 95% Capacity Reopener
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.4 for all POTW and PVOTW permits.

c. Part I.C.2 – Indirect Dischargers
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

d. Part I.C.3 – CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790.

e. Part I.C.4 – O & M Manual Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.

f. Part I.C.5 – Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18 VAC 160-20-10 et seq.), require licensure of operators.

g. Part I.C.6 – Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

h. Part I.C.7 – Closure Plan
Rationale: This condition establishes the requirement to submit a closure plan for the treatment works if the treatment facility is being replaced or is expected to close. This is necessary to ensure treatment works are properly closed so that the risk of untreated waste water discharge, spills, leaks and exposure to raw materials is eliminated and water quality maintained. Section 62.1-44.21 requires every owner to furnish when requested plans, specification, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purpose of the State Water Control Law.

i. Part I.C.8 – Water Quality Criteria Reopener
Rationale: VPDES Permit Regulation, 9 VAC 25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of water quality criteria.

j. Part I.C.9 – Sludge Reopener

Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage.

k. Part I.C.10 – Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J.4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

l. I.C.11 – Sludge Use and Disposal
Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B.2; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

m. I.C.12 – Pretreatment Program
Rationale: VPDES Permit Regulation, 9 VAC 25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulations.

n. I.C.13 – Materials Handling/Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and § 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

o. I.C.14 – Reopeners
Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

p. I.C.15 – Nutrient Reporting Calculations
Rationale: § 62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

q. I.C.16 – Suspension of Concentration Limits for E3/E4 Facilities
Rationale: 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that

includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

r. Part II – Conditions Applicable to All VPDES Permits
Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes to the Permit:

Permit Cover Page Changes:					
Item			**Rationale**		
Initial paragraph			Updated language to reflect GM 14-2003.		
Signatory authority			Updated to reflect current Manager's title.		
Part I.A. Changes:					
Parameter Changed	**Discharge Limitations Changed**		**Monitoring Requirements Changed**		**Rationale**
	From	**To**	**From**	**To**	
pH	No Change	No Change	1/Day	1 per Day	Updated monitoring frequency language to reflect most recent DEQ policy.
TSS	No Change	No Change	1/Month	1 per Month	Updated monitoring frequency language to reflect most recent DEQ policy.
Fecal Coliform	No Change	No Change	4/Month	4 per Month	Updated monitoring frequency language to reflect most recent DEQ policy.
DO	No Change	No Change	1/Day	1 per Day	Updated monitoring frequency language to reflect most recent DEQ policy.
Ammonia as N	No Change	No Change	3 Days/Week	3 Days per Week	Updated monitoring frequency language to reflect most recent DEQ policy.
TKN	No Change	No Change	3 Days/Week	3 Days per Week	Updated monitoring frequency language to reflect most recent DEQ policy.
E. coli	No Change	No Change	3 Days/Week	3 Days per Week	Updated monitoring frequency language to reflect most recent DEQ policy.
Free Cyanide	No Change	No Change	1/Month	1 per Month	Free Cyanide monitoring and reporting carried forward to the 2016 permit on a PJ basis. See Item 16 of this fact sheet for additional discussion. Updated monitoring frequency language to reflect most recent DEQ policy.
Hardness	No Change	No Change	1/Month	1 per Month	Updated monitoring frequency language to reflect most recent DEQ policy.
Enterococci	No Change	No Change	4/Month	4 per Month	Updated monitoring frequency language to reflect most recent DEQ policy.
$cBOD_5$	No Change	No Change	3 Days/Week	3 Days per Week	Updated monitoring frequency language to reflect most recent DEQ policy.
Total Recoverable Zinc	No Change	No Change	1/Month	1 per Month	Updated monitoring frequency language to reflect most recent DEQ policy.
Total Recoverable Copper	No Change	No Change	1/Month	1 per Month	Updated monitoring frequency language to reflect most recent DEQ policy.
Total Phosphorus	No Change	No Change	1/Year	1 per Year	Updated monitoring frequency language to reflect most recent DEQ policy.

Calendar Year Average					GM 07-2008, Amendment No. 2. See Item 16 of this fact sheet for additional discussion.
Total Phosphorus Year-to-Date	No Change	No Change	1/Month	1 per Month	Updated monitoring frequency language to reflect most recent DEQ policy. Monitoring requirements in accordance with GM 07-2008, Amendment No. 2.
Dissolved Sulfide	No Change	No Change	1/6 Months	1 per 6 Months	Monitoring and reporting requirements maintained in light of detected concentrations > 0.1 mg/L and in accordance with GM14-2003.
Hydrogen Sulfide	---	NL	1/Month	1 per 6 Months	Monitoring and reporting requirements added in accordance with GM14-2003. See Item 16 of this fact sheet for additional discussion.

From	**To**	**Rationale**
I.A.1(c)	I.A.1(c)	Deleted reference to limitations and reporting requirements effective January 1, 2012.
I.A.1(e)	I.A.1(e)	Updated language in accordance with agency policy. Added definition of “1 per Year” and “4 per Month” monitoring periods.
I.A.1(g)	---	Deleted; definition was added to I.A.1(e).
I.A.1(h)	I.A.1(g)	Renumbered; no changes.
---	I.A.(h)	Added in accordance with GM14-2003.
---	I.A.(i)	Added in accordance with GM14-2003 Section MN-3 – Hydrogen Sulfide.
I.A.3	I.A.3	Revised to reflect that at least 85% removal of $cBOD_5$ (instead of BOD_5) must be obtained in accordance with DEQ policy.

Additional Limitations and Monitoring Requirements Changes:

From	**To**	**Rationale**
I.B	I.B	Revised TRC weekly average limitation to 8.3 µg/L in accordance with the Reasonable Potential Analysis results. See Item 16 of this fact sheet for additional discussion.

Special Condition Changes:

From	**To**	**Rationale**
I.C.4	I.C.4	Updated language to reflect GM14-2003.
I.C.5	I.C.5	Revised reference to the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professional Regulations in accordance with GM14-2003.
I.C.7	I.C.7	Updated language in accordance with GM14-2003.
I.C.10	I.C.10	Updated language to reflect GM 14-2003. Updated QLs for total recoverable copper and zinc.
I.C.12	I.C.12	Updated language to reflect GM 14-2003.
I.C.13	I.C.13	Updated language to reflect GM 14-2003.
I.C.17	I.C.17	Deleted condition as monitoring requirements have been fulfilled during the 2011-2016 permit cycle.

22. Variances/Alternate Limits or Conditions: None

23. Regulation of Users - 9 VAC 25-31-280 B.9: Not applicable

24. Public Notice Information required by 9 VAC 25-31-280 B:

Comment Period: Start Date: XXXX, 2016 End Date: XXXX, 2016
Published Dates: XXXX, 2016 and XXXX, 2016
Publishing Newspaper: *The Rappahannock Record*

All pertinent information is on file and may be inspected, and copied by contacting

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Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment.

25. Additional Comments:

a. Previous Board Action:

- The Board issued a Consent Order on November 7, 2014 following several effluent limitations violations for ammonia, total phosphorus, TKN, and *Enterococci*. The facility paid a $5,513 civil charge and completed all the requirements of the Order. The Order was terminated on June 29, 2015.

b. Staff Comments:

- Planning conformance statement: The discharge is in conformance with the existing planning documents for the area.

- Controversial Permit Assessment: This permit is not expected to be controversial.

- E-DMR participation: the permittee has completed the e-DMR registration process, has been accepted into the e-DMR program, and is a current participant.

- The permittee is not currently a Virginia Environmental Excellence Program (VEEP) participant.

- Fees: Annual maintenance fees are up to date and were deposited on September 11, 2015.

- General Permit Registration:

  Nutrient: The permittee is considered a significant discharger of nutrients to the Chesapeake Bay watershed and is subject to the requirements of the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed. The permittee has Total Nitrogen and Total Phosphorus calendar year load limits associated with this outfall included in the current Registration List under registration number VAN020038, enforceable under the General VPDES Watershed Permit Regulation for Total

Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

Industrial Stormwater: This facility is not subject to the requirements of 9 VAC 25-151, General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity, since the permitted design flow of the wastewater treatment plant is less than 1.0 MGD.

- Effluent Monitoring Reductions: per GM 14-2003, reduced monitoring frequency is granted when a facility has not been issued any warning letters, notices of violations, or be under any Consent Orders or related enforcement documents during the past three years. Because of the compliance and enforcement history of the facility, a reduction in monitoring frequency is not considered.

c. Other Agency Comments:

- EPA Comments: by electronic mail dated 8/26/2011, EPA stated it performed a limited review of the draft permit based on the wasteload allocations required in the approved Indian Creek TMDL and that it had no comments related to the compliance with the TMDL requirements. See **Attachment H**.

- VDH-ODW Comments: the Virginia Department of Health – Office of Drinking Water reviewed the permit application and had no objections. In a memo dated January 11, 2016, they have indicated that there are no public water supply intakes downstream of the discharge/activity. See **Attachment H**.

- VDH-DSS Comments: The Virginia Department of Heath – Division of Shellfish Sanitation reviewed the permit application and had no objections. They have indicated that the project is located in condemned shellfish growing waters and the activity, as described, will not cause an increase in the size or type of the existing closure. See **Attachment H**.

- USFWS Comments: Coordination with the USFWS was submitted on July 22, 2016. The Agency responded on July 29, 2016, stating that based on the project description and location, it appears that no impacts to federally listed species or designated critical habitat will occur, and we have no further comment. See **Attachment H**.

d. Owner Comments: TBD. See **Attachment I**.

e. Public Notice Comments: TBD

f. Localities Notification: In accordance §62.1-44.15:01.A.2, 9 VAC25-31-290.G.2 and GM11-2005, the County of Lancaster (Board of Supervisors Chair and County Administrator) and the Northern Neck Planning District Commission were notified of the public comment period and sent the legal notice for the draft permit in a letter dated XXXX, 2016.

27. Summary of Attachments:

Attachment A	Flow Frequency Analysis Memo
Attachment B	Facility Flow Diagram
Attachment C	Topographic Map
Attachment D	Site Inspection Report
Attachment E	Effluent DMR Data and Water Quality Criteria Monitoring Data
Attachment F	Stream Sanitation Analysis Memo
Attachment G	Effluent Limitation Development
Attachment H	EPA, VDH and USFWS Coordination Responses
Attachment I	Owner Comments